



International Smelting & Refining Superfund Site Update

March 2007



The purpose of this fact sheet is to provide an update on the International Smelting & Refining (IS&R) Superfund Site.

We want to hear from you! If you have questions about the site you are encouraged to contact any of the team members listed below.

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Site Status

The U.S. Environmental Protection Agency (EPA) and Utah Department of Environmental Quality (UDEQ) have been working with Atlantic Richfield to complete a groundwater investigation and finalize the Remedial Investigation and Feasibility Study. The EPA also asked Atlantic Richfield to address a few remaining soil areas on the conservation area that contained elevated levels of lead. This Removal was completed in November 2007.

The work in the conservation area delayed completion of the Feasibility Study; however, EPA expects that it will be finalized in March 2007. EPA expects to distribute a Proposed Plan to residents in April 2007, which will kick-off a 30-day public comment period. During the public comment period, EPA will hold a Proposed Plan Public Meeting to explain and answer questions about the plan, and to take comments.

Results of the Groundwater Investigation

Groundwater investigations began in 2000 shortly after the site was placed on the National Priorities List. Water samples were collected from wells on site and in the Pine Canyon area. The Boys Ranch wells were the only ones with arsenic concentrations above water quality standards. The measured concentrations ranged from 120-140 ug/L (micrograms per liter), similar levels to those reported in the historic data from the 1970's when these wells were drilled. Due to the continued presence of arsenic in the Boys Ranch wells, the groundwater investigation was expanded to determine the source and extent of arsenic in groundwater.

Recent groundwater investigations have demonstrated that there is no current connection between the site and the elevated arsenic concentrations in any down gradient wells. These investigations also indicate that groundwater from the Oquirrh Range is not a likely source of arsenic in the Boys Ranch wells.

A review of historical site data suggests that it is possible the site could have released water with elevated arsenic concentrations to groundwater, but the groundwater investigations coupled with an understanding of arsenic behavior in surface water environments

suggests that historical sources are unlikely to be responsible for the elevated arsenic. It appears, based on site-specific investigation, that the elevated arsenic in the Boys Ranch wells is most likely due to natural sources, that is, geochemical reactions between groundwater and aquifer material containing naturally occurring arsenic.

How Will the Groundwater Contamination Affect Pine Canyon Residents?

As noted above, the presence of arsenic in groundwater at the Boys Ranch wells is most likely due to natural sources rather than the IS&R Site. Because of this, the Proposed Plan and Record of Decision for IS&R will not require groundwater cleanup actions or usage restrictions.

However, ongoing monitoring may be required to ensure that the site does not become a source of groundwater contamination in the future. The Tooele County Health Department (TCHD) may restrict drilling of domestic wells in areas where elevated levels of arsenic have been found in groundwater. These restrictions, if adopted, would be enforced by the TCHD. For more information about public input on possible restrictions, please contact the TCHD at 435-843-2340.

About the Groundwater Investigation

A comprehensive review of historical site operations, documents, water-quality data, discharge records and interviews with former employees was conducted to ascertain IS&R operations and determine how water was used and discharged from the site. Four possible sources were identified and investigated:

- 1) Historic site sources (releases from historic operations, infiltration from streams or irrigation);
- 2) Ongoing site point sources (tailings dump, ponds or other materials);
- 3) Flow of water from metals and minerals found in the Oquirrh Range to the aquifer (non site-related); and
- 4) Geochemical reactions of aquifer material (natural sources).

Historical Site Sources:

Review of the historical operations found several potential sources of arsenic contamination to groundwater, including water discharged from site operations into Pine Canyon Creek and to irrigation ditches, as well as into historic settling ponds. The Elton tunnel also could have discharged some arsenic-laden water as the tunnel dewatered the rocks surrounding the tunnel.

All identified potential historic sources of arsenic were investigated to the extent possible. Unfortunately, the historical water quality data record is incomplete and, therefore, the investigation was unable to reconstruct a continuous record of arsenic loads contained in the water. Of the available water quality data, some samples showed that elevated concentrations of arsenic were released from the historic site and mine operation, but the majority of the available data showed that arsenic concentrations in these waters were low.

While water with elevated arsenic concentrations may have been released from the site onto the surface, much of this arsenic probably precipitated with iron in stream beds and settling ponds, thus limiting the amount of water with elevated arsenic that might have infiltrated to the groundwater system.

Additional wells were installed on the site to investigate groundwater down gradient of historic settling ponds, including the pond associated with the Elton tunnel, but elevated arsenic concentrations were not found in any of these areas.

The review of historical operations did not identify any other potential historic sources of arsenic. However, although comprehensive, it does not preclude the future discovery of an unknown mining related source on the site.

On-Going Site Sources:

On-going site sources are those that would continue to release arsenic into the environment and potentially groundwater. Such sources might include tailings, slag and other mine-related solid waste.

To investigate these sources, boreholes were drilled adjacent to each of the potential identified sources at the IS&R site. While soil water in a few areas near the tailings impoundment showed elevated arsenic in

1997, additional boreholes did not find groundwater with arsenic contamination.

This result was expected as the tailings are so fine-grained that little water moves through them and, as a result, they are not likely a source of arsenic to groundwater. Tests on slag in Pine Canyon showed that there is little available arsenic. Boreholes drilled below the slag confirmed that arsenic was not leaching from the slag to groundwater. Samples of surface water from Pine Creek showed similar results. Wells located between the site and the Boys Ranch wells do not show elevated arsenic concentrations in groundwater.

Oquirrh Range:

The Oquirrh Range contains metals and minerals that have been mined for almost 100 years. It is conceptually possible that groundwater in contact with the metals and minerals could discharge into the sediments that fill Tooele Valley and contribute arsenic to the local alluvial aquifer.

However, this water also would be expected to carry other metals and minerals which are not present in groundwater from the Boys Ranch wells. This indicates that groundwater flow from the Oquirrh Range is not likely the source of arsenic in these wells.

Natural Geochemical Reactions:

Arsenic occurs naturally in many local aquifers in Utah as a result of arsenic being dissolved from rocks and minerals, or as a result of evaporation or from naturally heated underground (geothermal) water.

A study of the aquifer material in the vicinity of the Boys Ranch wells showed that these sediments contain arsenic that could be leached and contribute to elevated concentrations of arsenic in groundwater.

Thus, it is most likely that the source of arsenic in groundwater in the Pine Canyon area is from reaction of groundwater with arsenic-bearing sediment in the local aquifer.

Please note that the U.S. Environmental Protection Agency Region 8 recently moved to a new downtown Denver office. Telephone numbers and email addresses remain the same.

The new EPA address is:

**U.S. Environmental Protection Agency
Region 8, 8OC
1595 Wynkoop St.
Denver, CO 80202**

If you would like more information about the International Smelting & Refining Site, please visit EPA's Web site at:

<http://www.epa.gov/region8/superfund/>

EPA also maintains an Information Repository which contains the Administrative Record:

Tooele City Library
128 West Vine Street
Tooele, UT 84074
(435) 882-2182

We Value Your Opinion About this Fact Sheet

Please take a few minutes to either telephone or e-mail your responses to:

Jennifer Lane, 1-800-227-8917, Ext. 6813 or e-mail to lane.jennifer@epa.gov

1. How clear and understandable is this fact sheet?
2. Are we providing the information you need and in a timely manner?
3. What other information can we provide that would help you?

JL

U.S. Environmental Protection Agency Region 8

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